HM-641

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gerhard Heitze, et al.

Serial No: 10/538,970

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For: CRANK SCISSORS HAVING TWO PAIRS OF BLADES FOR CUTITNG ROLLING STRIPS

Examiner: Edward F. Landrum

Art Unit: 3724

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

S I R:

This appeal is taken from the Final Action mailed July 7, 2009.

Real Party in Interest

The real party in interest in the above-identified application is:

SMS Demag AG
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Related Appeals and Interferences

There are no related appeals or interferences of which Applicant is aware regarding the above-identified application.

Status of Claims

Claims 1-4 have been canceled. Claims 5-9 are pending in the application and are subject to the present appeal. Claims 5, 6 and 8 stand rejected under 35 U.S.C. 103(a) over EP 0075448 to McKee

in view of US Patent No. 3,510,045 to Petros et al. Claims 7 and 9 stand rejected under 35 U.S.C. 103(a) over McKee in view of US Patent No. 3,643,537 to Fries.

Status of Amendments After Final Rejection

No response after final was filed.

Summary of the Claimed Subject Matter

The claimed invention will now be summarized with reference to the drawings being made by way of reference numerals.

Independent Claim 5

The claimed invention recites a crank shear, especially for cutting rolled strip (22), which comprises two pairs of blades (3, 4) that can be mounted on blade holders (1, 2)(see page 5, lines 6-7). The blade holders (1, 2) are supported opposite each other in a vertical plane (x-x) in a pair of eccentric drive shafts (5, 6) and are pivoted on torque supporting levers (7, 8) in double-joint mechanisms (9, 10) in interaction with two hydraulic control units (11, 12) that act on

these double-joint mechanisms (9, 10)(see page 5, lines 7-12). The blade holders (1, 2) form axially parallel pairs of bearing surfaces (16-19) for the pairs of blades (3, 4) on approximately radial projections (13-15)(see page 5, lines 13-15). The upper pair of blades (3) is arranged on inner, facing bearing surfaces (16, 17) of a curved recess (20) of the upper blade holder (1)(see page 5, lines 15-17). The lower pair of blades (4) is arranged on outer, oppositely directed bearing surfaces (19, 18) of a projection (15) oriented towards the recess (20)(see page 5, lines 18-20). The projection (15) is relatively smaller and formed as a single piece with the lower blade holder (2)(see Figs. 1-4). Each blade of the lower pair of blades (4) has a completely exposed surface facing away from the other blade of the lower pair of blades (4) (see Figs. 1-4). The completely exposed surface is an entire face of the blade (see Figs. 1-4). Each of the blades of the lower pair of blades (4) is independently attached to the lower blade holder (2) (see Figs. 1-4).

Grounds of Rejection to be Reviewed on Appeal

The following grounds are presented for review:

Whether claims 5, 6 and 8 are unpatentable under 35 U.S.C. 103(a) over McKee in view of Petros et al.

Whether claims 7 and 9 are unpatentable under 35 U.S.C. 103(a) over McKee in view of Fries.

Argument

The Rejection of Claims 5, 6 and 8 under 35 U.S.C. 103(a) over McKee in view of Petros et al.:

In rejecting claims 5, 6 and 8, the Examiner stated the following in the final rejection:

"Mckee teaches (see Figure 1) a crank shear comprising two pairs of blades (4 and 5) mounted on blade holders (2 and 3), wherein the blade holders (2 and 3) are supported opposite each other in a vertical plane in a pair of eccentric shafts (circular portion found in the middle of both 2 and 3). The eccentric shafts are pivoted on levers (6 and 20) in double joint mechanisms (7 and 21). The blade holders (2 and 3) have many pairs of axially parallel bearing surfaces and radial; projections (to the left of blade 4, between blades 4 and 5, and after blade 5; see Figure 1). The upper blade holder (2) has inner facing bearing surfaces within a recess that the blades (4 and 5) are arranged on. The lower blade holder (3) has outer, oppositely directed bearing surfaces of a narrow projection (projecting attachment portion found between the blades on the lower blade holder) oriented towards the recess.

When support levers (6 and 20) are spread to form an approximately 90 degree angle an upper piston rod (11) attached to the double joint mechanism (7) is fully extended and a lower piston rod device (25) attached to the double joint mechanism (21) is retracted. When support levers (6 and 20) are brought together to become substantially parallel to the strip of material being cut (30) the upper piston rod device (11) attached to the double joint mechanism (7) is fully retracted and the lower piston rod device (25) attached to the double joint mechanism (21) is extended. In this position the upper and lower double joint mechanisms (7 and 21) extended approximately linearly with each other (see Figure 1). Furthermore, Mckee teaches (Pg. 6, lines 2-27; Pg. 7, lines 1-6) the upper blade

carrier (2) being able to be swung to a position outside of its normal shearing position to make it easier to replace the blades (4 and 5). As seen in Figure 1 each lower blade has a face that faces away from the other blade. Both of these faces have a completely exposed surface (top portion of each outward face extending above the lower blade holder 3). Furthermore, the lower blades can be considered independently attached to the lower blade holder as neither lower blade is attached to the other before being attached to the crank shear.

Mckee teaches all of the elements of the current invention as stated above except the exposed surfaces being entire faces of the lower blades, the upper blades being curved, and the projection being formed of a single piece with the lower blade holder. Mckee further fails to explicitly disclose the lower blades are attached independently.

Petros teaches (Figure 4) that it is old and well known to attach blades (64, 68, and anvils of 70 and 72) on a shearing device in a manner that completely exposes the entire face of the blades. Fries further teaches independently attaching each blade of both the upper and lower sections of the device (see the independent bolt and nut connection for each blade as shown in Figure 4).

It would have been obvious to have modified Mckee to incorporate the teachings of Petros to expose entire surfaces of the lower blades and independently attach the lower blades to the lower blade holder because the connection types of Mckee and Petros were art recognized equivalents at the time of the invention in shearing applications. One of ordinary skill in the art would have found it obvious to substitute the blade connections of Petros for the connections of Mckee. Furthermore, applicant has not disclosed that independently connecting each lower blade or having an entire face of each lower blade be exposed solves any stated problem or is for any particular purpose, and it appears that the shearing device would perform equally well with the blades being attached with any known connection means.

It would have been an obvious matter of design choice to modify Mckee to have the recess the inner blades be curved, since Applicant has not disclosed that having a curved recess in the upper blade holder solves any stated problem or is for anu particular purpose and it appears that the shearing device would

perform equally well with any shape recess provided the recess sufficiently supported the cutting blades.

Furthermore, it has been held the use of a one piece construction instead of structure formed of more than one piece would be merely an obvious engineering choice. Therefore it would have been an obvious matter of design choice to modify Mckee by having the projection be formed as one piece with the lower blade holder, since applicant has not disclosed that having the projection being formed on the lower blade holder solves any stated problem or is for any particular purpose and it appears the clamps would perform equally well with or without the projection being formed with the lower blade holder."

McKee discloses a double bladed shear. The blades of the presently claimed invention have a different fastening than the blades of McKee. In McKee the blade carriers are identical in form. The blade 4 rests on the left side against a projection and the blade 5 rests on the right side against a projection. The upper pair of blades and the lower pair of blades are fastened by a threaded clamping element. During cutting or cropping a strip one blade is pressed against the clamping element.

According to the present invention, the left upper blade 3 is fastened to a projection 14 and the right upper blade 4 is fastened to a projection 13. The fastening of each blade is separate from the other blade. An exchange, and in particular a loosening, of only one blade is possible. In McKee, on the other hand, both blades are loosened by loosening the clamping

arrangement. It is not possible to exchange only one pair of blades in McKee, as in the presently claimed invention.

Furthermore, contrary to McKee, in the presently claimed invention the lower knife is fastened to only one projection 15. In this way the projection is between the blades and can support the blades during cutting/cropping. In McKee, the support is provided by the clamping elements. This means that the screws take up a large part of the applied force. In the present invention the bearing surfaces 18, 19 are formed on the lower blade holder 2, while in McKee the bearing surfaces are formed separate from a screwed-in clamping element.

As seen in Fig. 1 of McKee, the upper and the lower pairs of blades are mounted on bearing surfaces that face each other. There is no teaching or suggestion of mounting the lower pair of blades on surfaces that face away from each other, as in the presently claimed invention.

In the present invention the upper pair of blades is arranged on bearing surfaces 16 and 17 that face each other and the lower pair of blades is arranged only on outer, oppositely directed bearing surfaces 18 and 19.

Furthermore, as seen in Fig. 1 of McKee, the upper and the lower pairs of blades are mounted on bearing surfaces that face each other. There is no teaching or suggestion of mounting the lower pair of blades only on outer surfaces that face away from each other, as in the presently claimed invention.

To reiterate, the blades of the presently claimed invention have a different fastening than the blades of McKee. In McKee the blade carriers are identical in form. The blade 4 rests on the left side against a projection and the blade 5 rests on the right side against a projection. The upper pair of blades and the lower pair of blades are fastened by a threaded clamping element. During cutting or cropping a strip on blade is pressed against the clamping element.

According to the present invention, the left upper blade 3 is fastened to a projection 14 and the right upper blade 4 is fastened to a projection 13. The fastening of each blade is separate from the other blade. An exchange, and in particular a loosening, of only one blade is possible. In McKee, on the other hand, both blades are loosened by loosening the clamping arrangement. It is not possible to exchange only one pair of

blades in McKee, as in the presently claimed invention.

Furthermore, contrary to McKee, in the presently claimed invention the lower knife is fastened to only one projection 15. In this way the projection is between the blades and can support the blades during cutting/cropping. In McKee, the support is provided by the clamping elements. This means that the screws take up a large part of the applied force. In the present invention the bearing surfaces 18, 19 are formed on the lower blade holder 2, while in McKee the bearing surfaces are formed separate from a screwed-in clamping element.

The blades of the presently claimed invention have a fastening that provides the capability of loosening and removing one blade of a pair of blades without loosening or effecting the positioning of the other blade of the pair of blades. This is not possible with the fastening of McKee. In McKee the blade carriers are identical in form. The blade 4 rests on the left side against a projection and the blade 5 rests on the right side against a projection. The upper pair of blades and the lower pair of blades are fastened by a threaded clamping element. During cutting or cropping a strip on blade is pressed against the clamping element.

Furthermore, contrary to McKee, in the presently claimed invention the lower pair of blades is mounted so that each blade of the lower pair of blades has a completely exposed surface facing away from the other blade of the lower pair of blades. The completely exposed surface is an entire face of the blade. The mounting of the lower pair of blades in McKee is completely different.

The patent to Petros et al. discloses an apparatus for joining strip material. The Examiner combined Petros et al. with McKee in determining that claims 5, 6 and 8 would be unpatentable over such a combination. Applicant submits that this combination of references does not teach a crank shear construction in which each of the blades of the lower pair of blades is independently attached to the lower blade holder, as in the presently claimed invention. There is no incentive to have such an independent attachment in McKee since it would complicate his construction. Thus there is no incentive to make such a modification and in turn the modification would not be obvious in light of increased complexity that would result.

Thus, it is submitted that the rejection of claims 5, 6 and 8 under 35 U.S.C. 103(a) is in error.

The Rejection of Claims 7 and 9

under 35 U.S.C. 103(a):

Claims 7 and 9 depend from independent claim 5, and stand or fall with claim 5.

Conclusion

Accordingly, in view of the above considerations, it is Applicant's position that the Examiner's rejections of claims 5-9 under 35 U.S.C. 103(a) are in error and should be reversed.

The amount of $540.00 to cover the fee for filing an appeal brief is being charged as per attached form PTO-2038. Any additional fees or charges required at this time in connection with this application should be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on January 7, 2010.

By: 
Klaus P. Stoffel

Date: January 7, 2010

Claims Appendix

Claims 1-4. (Canceled)

5. Crank shear, especially for cutting rolled strip (22), which comprises two pairs of blades (3, 4) that can be mounted on blade holders (1, 2), wherein the blade holders (1, 2) are supported opposite each other in a vertical plane (x-x) in a pair of eccentric drive shafts (5, 6) and are pivoted on torque supporting levers (7, 8) in double-joint mechanisms (9, 10) in interaction with two hydraulic control units (11, 12) that act on these double-joint mechanisms (9, 10), wherein the blade holders (1, 2) form axially parallel pairs of bearing surfaces (16-19) for the pairs of blades (3, 4) on approximately radial projections (13-15), with the upper pair of blades (3) arranged on inner, facing bearing surfaces (16, 17) of a curved recess (20) of the upper blade holder (1), and with the lower pair of blades (4) arranged on outer, oppositely directed bearing surfaces (19, 18) of a projection (15) oriented towards the recess (20), the projection being relatively smaller and formed as a single piece with the lower blade holder, each blade of the lower pair of blades having a completely exposed surface facing away from the other blade of the lower pair of blades, wherein

the completely exposed surface is an entire face of the blade, each of the blades of the lower pair of blades being independently attached to the lower blade holder.

6. Crank shear in accordance with Claim 5, wherein in a spread position of the torque supporting levers (7, 8) of approximately 90° and at the shortest separation (D) of the eccentric shafts (5, 6) and a running direction (21) of the rolled strip (22) towards the supporting levers (7, 8), a position of the pair of blades (3) for the cropping cut at the leading end (23) of the strip is reached, in which the hydraulic control unit (11) on the upper supporting lever (7) of the double-joint mechanism (9) is fully extended, and the control unit (12) on the lower supporting lever (8) of the double-joint mechanism (10) is fully retracted.

7. Crank shear in accordance with Claim 5, wherein, in a spread position of the torque supporting levers (7, 8) of approximately 90° and at the greatest separation (d) of the eccentric shafts (5, 6) and a running direction (21) of the rolled strip (22) towards the supporting levers (7, 8), a passage position of the crank shear is reached, in which the control unit (12) on the lower supporting lever (8) of the double-joint

mechanism (10) is fully retracted, and the control unit (11) on the upper supporting lever (7) of the double-joint mechanism (9) is fully extended.

8. Crank shear in accordance with Claim 5, wherein in an approximately horizontal parallel position of the torque supporting levers (7, 8) opposite the running direction (21) of the rolled strip (22) and at the shortest separation (D) of the eccentric shafts (5, 6), and with the upper double-joint mechanism (9) and lower double-joint mechanism (10) extended approximately linearly, a position of the rear pair of blades for cutting the tail end (24) of the strip is reached, in which the hydraulic control unit (11) on the upper supporting lever (7) of the double-joint mechanism (9) is fully retracted, and the control unit (12) on the lower supporting lever (8) of the double-joint mechanism (10) is fully extended.

9. Crank shear in accordance with Claim 5, wherein, in a position of the upper supporting lever (7) that is downwardly inclined towards the rolled strip (22) with the upper hydraulic control unit (11) of the double-joint mechanism (9) retracted, and in a position of the lower supporting lever (8) that is upwardly inclined towards the rolled strip (22) with the

lower control unit (12) of the double-joint mechanism (10) fully extended, and with the greatest separation (d) of the eccentric shafts (5, 6), the passage position through the shear is reached.

Evidence Appendix

N.A.

Related Proceedings Appendix

There are no related proceedings.